

The 1895 Krizik electric car designed by Frantisek Krizik.



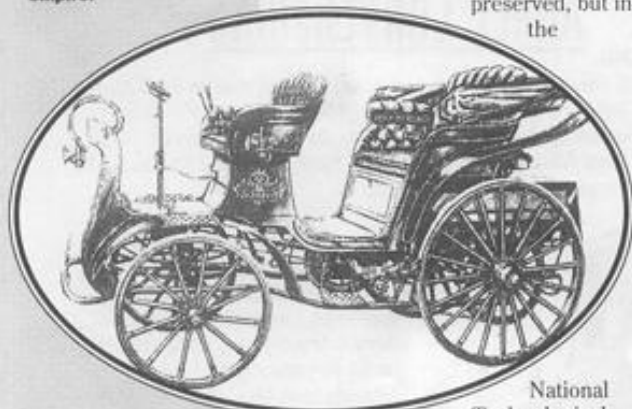
Just Czech-ing

Czech cars up to 1945 **Part One**

by Marian Suman-Hreblay

We can proudly state that in the pioneering epoch of creation of the future automobile, many Czech names are pronounced with great respect. First of all it was Josef Bozek (1782 - 1835), an engineer at the Prague Technological Institute, who presented his real steam car in the Prague Stromovka Park on 24th September 1815. Thus Prague became the scene of the first ride of a steam vehicle on the continent after the memorable experiments of Cugnot, but, by the design of his car, Bozek surpassed by far the heavy English steam stage coaches. Bozek's steam car has not been preserved, but in the

1897 HW President - the first car built in the Austro-Hungarian empire.



National Technological Museum in Prague its model can be found.

Among the designers of electric cars also ranges a member of Czech nation, Frantisek Krizik (1847 - 1941) who, among others, amazed the whole world in 1878 by an ingenious solution of self-regulating arc-lamp, who built the first electric

power plants in Bohemia, installed electric town lights and who, in 1891, built the electric railway from Letna to the Prague Stromovka Park on the occasion of the Jubilee Exhibition. It was natural that the electric road car could not be ignored by him. The first one was designed by him in 1895, driven by a 5hp electric motor, his second car already had a steering wheel and pedal-controlled motor and brakes, the third Krizik's electromobile surpassed its epoch considerably, for it had separate 3hp electric motors in each of the rear wheels. Another improved model of his car had its own petrol engine driving a dynamo by which the battery of accumulators was recharged.

Nowadays the Tatra works in Koprivnice (Nesseldorf) are world-known. In 1853 when Ignaz Schustala and his two friends established here a small workshop producing passenger coaches, nobody could anticipate the big factory that would grow here under the Beskydy Mountains. In 1872 the workshop was equipped with a big steam engine and two steam hammers so that it was possible to raise the production to 1,200 coaches in a year. Later, the production of railway carriages was started here. And then came the historical moment. In 1893, Theodor von Liebig, an amateur of motoring and factory owner of Liberec (Reichenberg), brought the new product of Carl Benz from Mannheim to Czechoslovakia. Finally the year 1897 came, in which the forefather of all automobiles of Czechoslovakia - the President - was

completed.

For its construction a four seater coach type Mylord was used after some modifications. The Benz engine was placed under the back seats. It was a water-cooled four stroke flat-twin cylinder engine of 2,750cc reaching 600rpm, and giving a constant output of 7hp. The fuel mixture was formed in a surface carburettor, the ignition was a low tension make-and-break system and cooling was provided by a cylindrical radiator of a very interesting design placed behind the back rest directly above the engine, together with a dripped lubrication device. Sprocket chains were used for power transmission to the 43.31" diameter rear wheels. The front wheels were steered around king pins as in today's automobiles, and the car was steered by bicycle-like handlebars, with the speed changed by tilting the steering pillar with the handlebars forwards or backwards. The front of the car was protected by a bumper.

The first car in the Austro-Hungarian Empire was presented by the director of Koprivnice factory Hugo Fischer von Roslerstamm to the then-recently established Austrian Automobile Club in Vienna for an exhibition organised at the occasion. It was decided that the car would be used for some kind of publicity ride from Koprivnice to Vienna. Thus on 21st May 1898 two cars left the factory: the first was a 4hp Benz, the other the President, which had just been finished. The distance of 210 miles was covered by the two cars in 24 hours, but the net running time was fourteen and a half

"At the time when the production of motor vehicles was started, the factory management was mostly German, and so the names of the cars were also German"

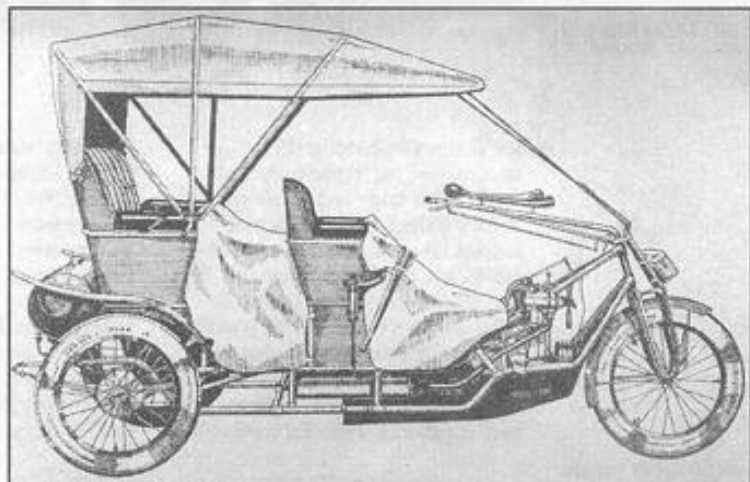
hours only, thus averaging 14.5mph.

At the time when the production of motor vehicles was started, the factory management was mostly German, and so the names of the cars were also German: Nesselsdorfer, Spitzbub, Wien, Bergsteiger, Adhof, Vierer Balder, Tourenwagen, etc. Later on, letters of the alphabet were employed as type symbols, eg A, B, C, D, etc. Only after WW2 was numerical designation of models introduced, in the sequence in which the individual models were produced. After a three-digit number had been attained, the numbering was changed to a basic system. The first figure always described the category or purpose of the respective vehicle: 100 was reserved for commercial vehicles, 200 for delivery vans, 300 for rail vehicles, 400 for trolleybuses, 500 for motor buses, 600 for passenger cars and finally 800 was intended for special purpose vehicles.

In 1906 the first Koprivnice-made ohc engine, the S4 four cylinder model



A Type A Laurin & Klement 7hp voiturette of 1906 with v-twin engine.



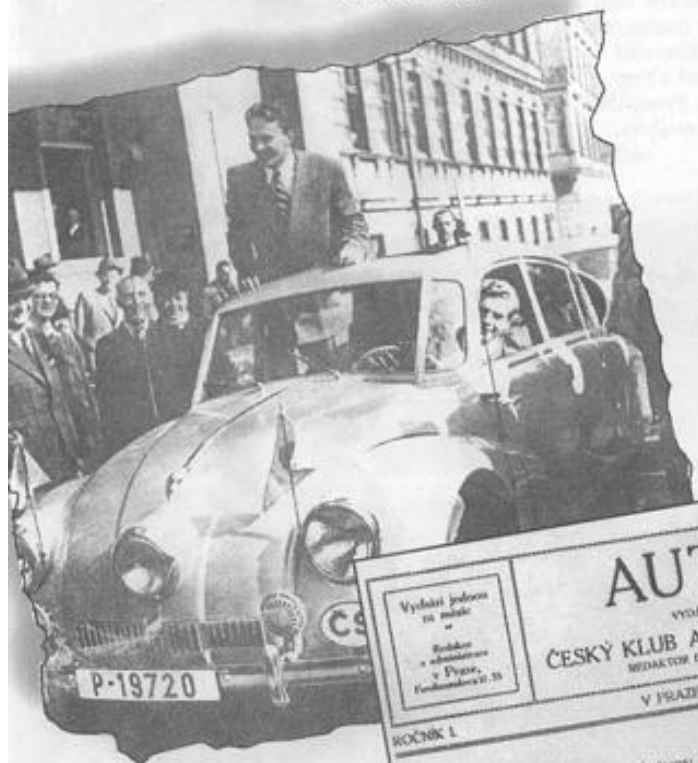
A 1910 Walter three wheeler.

of the designer Hans Ledwinka came into existence (3,306cc, 20/30hp). It was fitted to the 4-6 place S models in which several new design features were incorporated: three-point mounting of the engine, monobloc design of the engine and

gearbox forming a sturdy integral unit, and new design of the bell-type gearbox. In 1914 (to 1925) the manufacture of the U six cylinder model was started (5,340cc, 65hp), in which four wheel brakes were series-mounted for the first time - a new feature of world high standard.

At the 1923 Prague Motor Show the small, simple and sturdy Tatra 11 model was introduced. It was epoch-making in the history of small cars, for the built-up conception of Hans Ledwinka. It had an extremely simple and rigid chassis with a backbone tube with swinging half axles in the rear, rigid front axle, a front-mounted flat twin cylinder, air-cooled engine with overhead valves of 1.056cc and 11/12hp. From 1926 to 1934 this was built with the more powerful 14hp engine and the same displacement as model Tatra 12. We must also mention the Tatra 54 (1931 - 1934) with a four cylinder flat air-cooled engine, 1465cc, 22hp; the Tatra 57 (1931 - 1935) with the similar engine but 1155cc and 18hp, later built as the Tatra 57A (1936 - 1938) and 57B (1938 - 1949) with 1256cc 25hp engine, as well as bigger Tatra 75 (1933 - 1942) with a four cylinder flat four cylinder air-cooled 1688cc 30hp engine.

On 5th March 1934 the Tatra 77 was demonstrated to experts and journalists. This model was →



A 1946 Tatra 87 with Czechoslovakian globetrotters J Zikmund and M Hanzelka.

Vydání jednovazného motoru
v Praze
v únoru 1913

AUTO

VYDAVA
ČESKÝ KLUB AUTOMOBILISTŮ
REDAKTOR DR. J. KRÁSA

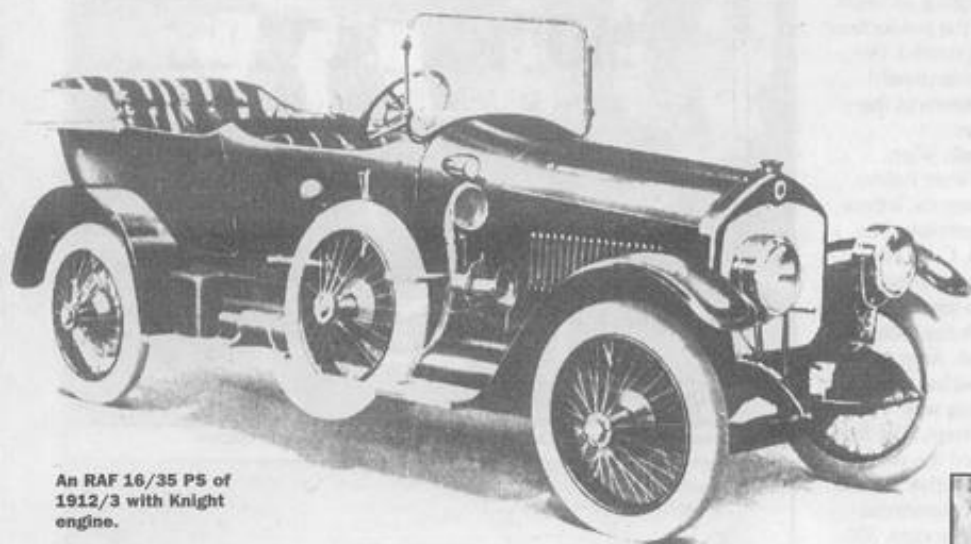
Jednovazný vůz
75 hallov
v Praze
v únoru 1913

ROČNÍK I. ČÍSLO 4. a 5.

Některé typy vozů model 1913.

Kopřivnické továrny automobilů, (K. A. K.)

V období této doby se vše posouvá směrem k většímu komfortu. Vozů této doby je mnoho, a to jak v Praze, tak v ostatních městech. Jsou to vozy, které jsou velmi jednoduché a praktické. Jsou to vozy, které jsou velmi jednoduché a praktické. Jsou to vozy, které jsou velmi jednoduché a praktické. Jsou to vozy, které jsou velmi jednoduché a praktické.



An RAF 16/35 PS of 1912/3 with Knight engine.

→ the first series-production streamlined car in the world, with flush-sided body and V8 air-cooled 2973cc (60hp) engine mounted behind the rear axle, a design of E. Ubelacker and Hans Ledwinka. This was built from 1935 to 1936 (150 cars) as the Tatra 77A with a more powerful 3380cc 75hp engine and a maximum speed of 150kmh. 25 cars were made from the luxurious twelve cylinder Type Tatra 80 of

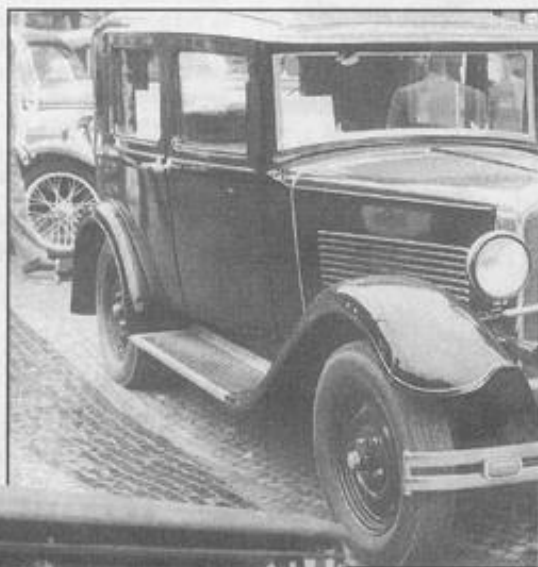
1931 with water-cooled V12 5990cc 120hp engine.

In 1936 - 1950 there was a successful Tatra 87 with V8 air-cooled engine of 2968cc, 75hp, 160kmh and in 1936/7 the Tatra 97 with four cylinder flat engine, air cooled, 1749cc, 40hp and 130kmh. Both had a rear-mounted engine. From 1897 to 1945 there were about sixty

different types of Tatra cars.

The priority of Koprivnice in the production of the first motor car in Bohemia cannot change the fact that Mlada Boleslav (Jungbunzlau) is the actual main centre of the Czechoslovakian automobile industry, even though the first car was produced there eight years later.

Vaclav Klement, originally a blacksmith, later a bookseller in Mlada Boleslav, was highly interested in the technical novelty of that time - the bicycle - and got one of the first products already fitted with ball bearings for himself. When he found a good companion and an



A 1930 Z-9 saloon.

The WZ model of Walter dating from 1925.



excellent expert, Vaclav Laurin, they decided together to establish a workshop in Mlada Boleslav. A few days before the end of 1895 they rented a small workshop of 144 square yards, equipped with a 2hp steam engine, three machines and seven workers.

First they began to produce bicycles, but these had poor sales. But the two enterprising companions did not give up, and Klement brought a motorcycle from the Paris Exhibition. They started to produce a motorcycle of their own design under a

Hieronimus and others brought many victories from the racing tracks abroad, the Laurin & Klement firm was working hard designing their first automobile. From 1905 they started production of a cheap two seater, a so-called voiturette with a top speed of 28mph and a surprisingly low fuel consumption of 48mpg. The front-mounted engine was a 7hp four stroke water-cooled V-twin, 1005cc (later 1114cc displacement). Other important types were a four seater two cylinder Type C2 (1907 - 1915, 2278cc, 10/12hp), luxurious four cylinder Type E (1907 - 1911, 4556cc, 24/28hp), cheap Model F (1907 - 1918, four cylinder, 2427cc, 14/16hp) and a straight eight Model FF of 1907 (4854cc, 35/40hp).

In the Twenties were produced mainly expensive passenger cars, also with slide-valve (sleeve valve) Knight engines:

Mk 6, 1921 - 1925, 6 cyl, 3498cc, 14/50hp 445, 1923 - 1924, 6 cyl, 4962cc, 19/60hp 150, 1923 - 1925, 4 cyl, 1460cc, 6/20hp 400, 1924 - 1925, 4 cyl, 3308cc, 13/40hp

Since 1925 the Laurin & Klement factory was bought by the Skoda joint-stock company of Plzen, which still exists in Mlada Boleslav as the Czechoslovakian top automobile factory. As successful ones were sold these Skoda types:

SUCCESSFUL SKODA TYPES

- 110 1925 - 1928, 4 cyl, 1794cc, 7/25hp
- 4R 1928 - 1930, 4 cyl, 1944cc, 32hp
- 6R 1928 - 1936, 6 cyl, 2918cc, 50hp
- 860 1928 - 1932, 8 cyl, 3880cc, 60hp
- 650 1930 - 1936, 6 cyl, 2703cc, 50hp
- Popular 1934 - 1942, 4 cyl, 99ccc, 20/22hp
- Popular 1100/1101 OHV 1938 - 1944, 4 cyl, 1089cc, 30-32hp
- Superb 1938 - 1940, 6 cyl, 3140cc, 85hp

Part Two of Czech Cars up to 1945 - is in the May issue of CCM.



Czech name Slavia. While the famous racing drivers Toman, Podsednicek, Vondrich,

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**CARS UP
TO 1945**

Part Two

Just Czech

by Marian Suman-Hreblay

**"After WW2
the production
of passenger
cars was
stopped, and
only several
luxurious
limousine with
bullet-proof
bodies for
government
purposes were
made."**

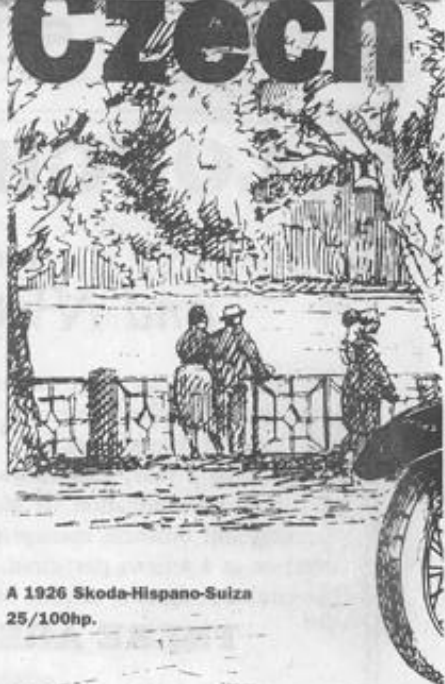
Up to 1945, there were about 65 Laurin & Klement types and 31 Skoda types.

The 1906/7 Velox passenger car was called "Russian Type" owing to deliveries of taxi cabs to Moscow. These cars, made in Prague-Karlin quarter, had a water-cooled vertical single cylinder engine placed under the driver's seat. Displacement was 1020cc, 10hp at 2000rpm, magneto ignition, drip lubricator. Especially good was the three speed and reverse constant mesh gearbox with a fully independent clutch in each couple of transmission gears. One of the rear wheels was driven by a chain and the other through a differential gear. The foot brake was on the gearbox, the hand brake in the rear chain wheel, and top speed was 30mph.

RAF - Reichenberger Automobil Fabrik - was founded by known car driver and textile magnate Theodor von Liebig in Liberec (Reichenberg) in 1907. One year later this firm introduced its first car, a four cylinder 4508cc 30hp convenient passenger car with four speed gearbox and brakes on all four wheels.

Available was also a small two cylinder 10hp version of this car. In 1909 there was the 30hp passenger car bodied as a landaulette, three-quarter landaulette, double phaeton and a sports car. From 1909 to 1912 RAF produced a successful type H 10 with four cylinder 5300cc SV engine developing 45hp. Another 1909 type, the FW 25 with four cylinder 3053cc 25hp engine, was built as a four/five seater phaeton or light truck with load capacity of 800kg. In 1912, as the first in the Austro-Hungarian empire, RAF bought a licence to produce the Knight engines, later (since 1913) also used by Laurin & Klement in their cars, as RAF united with Laurin & Klement in 1913.

The beginning of the existence of one of the most important Czech makes, Praga, was in 1907 when První ceskomoravski továrna na stroje (the first Czech machine factory) in Prague, and Fr. Ringhoffer Co of Prague-Smichov founded in March 1907 the Prague Motor Car Co: Prazská automobilni továrna - Prager Automobil-Fabrik, with trade mark PAT-PAF (since 1908 already known as Praga). From the outset



**A 1926 Skoda-Hispano-Suiza
25/100hp.**

the Praga was a symbol of quality. To 1914 there were made cars under licence Renault, Charron and Isotta-Fraschini, all of them with two and four cylinder engines.

In 1914 to the factory came a new constructor-in-chief, Frantisek Kec, who created a whole scale of classic cars: four cylinder water-cooled sidevalve engines, stiffness axles in front and rear, semi-elliptic springs and four speed gearbox.

Those were types Mignon (15 series, 1911 - 1926), Grand (1 series, 1912 - 1919, 3824cc), Alfa (12 series, 1913 - 1927, 1130/1328cc) and Piccolo (6 series, 1924 - 1926; up to 4th series 707cc, later 824cc and in 1927 a 7th series with 856cc engine).

Since 1927 Alfa and Mignon were rebuilt and fitted out with six cylinder sidevalve engines (13-16th series, 1928 - 1930, 1496cc; 17-21st series, 1931 - 1933, 1795cc), and Grand got straight eight sv engine (1928 - 1929, 3582cc, 2-11th series); 1930 4429cc, 17-18th series). The Type Piccolo 201 - 205 (8-20th series, 1928 - 1934, 995cc) was a very successful small car, and Model 306 (1932 - 1934, 1449cc) had bored wheel track. All engines had detachable aluminium heads with Ricardo combustion chamber. A small car, Baby (1934 - 1937, 996cc) did not sell so well as its predecessor,

springs. The six cylinder Alfa (1937 - 1942) had a 2492cc engine and Goldne (1935 - 1938) the 3912cc one. After WW2 the production of passenger cars was stopped, and only several luxurious limousine with bullet-proof bodies for government purposes were made. Praga now build light and semi-trucks only, and Avia trucks under Renault-Saviem licence in the modern factory in Prague-Letnany.

Fitter Josef Walter began in Prague in 1898 to repair cycles, then producing his own cycles and from 1902 also motorcycles. In 1909 he

the WIZ and WIZI (2100cc). The Type P1 had a 1940cc engine and the Type 1500 was made in 1928. WIZI was reconstructed to 4B (1900cc, ohv), and was produced, together with the 6B Type (six cylinder, 2500cc) to 1932. A big Royal had a twelve cylinder 5900cc engine. In 1932 - 1938 Walter made the famous Type Junior with four cylinder 1000cc sv and later ohv engine, under the Fiat Balilla licence. Then following the six cylinder Princ and Regent cars. After WW2 lorries only were made, using Praga RN chassis.

KAN - Kralovehradecka tovarena automobilu Alois Nejedly, Kukleny, also known as Konigsberger



1931 Wikov 35 with streamlined body.

Automobilfabrik Nojedly - produced cars from 1910 to 1914. The Type A (1910) had a single cylinder 890cc engine of 5/7hp, and in 1911 came a two seater with single cylinder 7hp engine and a four seater with twin cylinder 11hp engine. The driver Franz Czernil won with the car the 460km reliability run in 1913, and in the same year were also made five-passenger cars with four cylinder in-line sv engines of 1330cc, 20hp and 30hp, developing a top speed of 70kmh. From 1921 to 1923 this factory made small cars named Start, designed by Frantisek Petrasek and fitted with twin cylinder 1114cc sv engines (Type B) or four cylinder 1460cc sv engines (Type C), later built also as light vans.

Frantisek Wichterle founded in Prostejov in 1878 a small factory making agricultural machines, which was in 1900 one of the largest of its kind in Bohemia. In Prostejov there was also another similar firm owned by Dr Frantisek Kovarik. These two factories

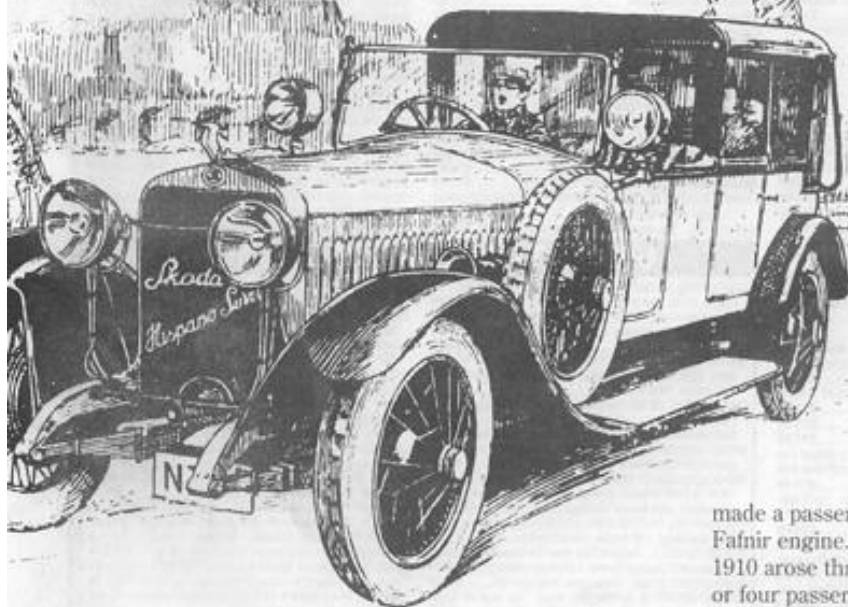
made a passenger car fitted with a Fafnir engine. In the spring of 1910 arose three-wheelers for two or four passengers, which were well-known in Russia too. In a new factory in Jinonice from 1913 he made the Walter W III cars (four cylinder, 2600cc sv engine, 25hp, 85kmh), W II (four cylinder, 1840cc engine, 20hp, 75kmh) and W I (four cylinder, 1240cc, 13hp, 80kmh). After WWI the WZ 1500 came, which in 1920 was known as

the Piccolo.

J Petranek, together with F Kec, established a new-type Piccolo 1128cc (1937 - 1941), later Super Piccolo 1660cc, and the type Lady 1700cc (1935 - 1941) with trapezoidal front axle and coil

LEFT - A 1932 Aero 662 two door drophead.

-ing





A 1936 Praga Lady with body by Unlik of Prague.

"The foot brake was on the gearbox, the hand brake in the rear chain wheel, and top speed was 30mph."

united to form a joint-stock company called "Wichterle Kovarik Ltd". They bought in Vienna an Italian Ansaldo car in 1922 which was a pattern for designers Maly and Kostal. Their first own constructed car was the Wikov 7/28 of 1924 (four cylinder, 1480cc, 32hp, 70kmh) available as a limousine, cabriolet, delivery van or ambulance. Wikov 40 and Standard were available as 4/6 place limousines or cabriolets. In 1931 the streamlined body was introduced, and in 1932 there was a prototype of a small car with water-cooled two stroke twin cylinder engine in the rear. In that time, Wikov 35 had a 1740cc 35-37hp engine, and Wikov 40 the 1940cc 40-43hp engine.

"Z" is not only the last letter in the alphabet but also one of Czechoslovakia's

Ceskoslovenske zavody na vyrobu zbrani v Brne (founded in 1918), later Ceskoslovenska zbrojovka Brno (arms factory), began since 1923 to produce the small cars named Disk (designed by B Novetny) which



1946 Aero Minor two door saloon.



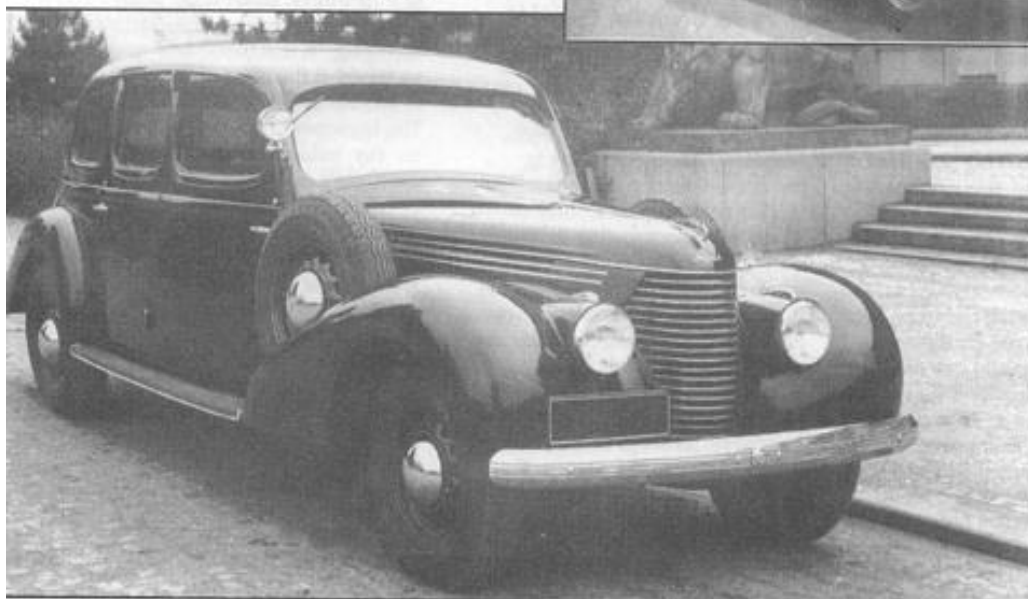
A 1949 Tatra 600 cabriolet with body by Sodomka.

achieving 110kmh.

The aeroplane factory Aero in Prague-Vysocany produced from May 1930 very popular Aero 662 cars with two stroke twin cylinder 662cc engines, from 1933 with 750cc engines and open body for 2/3 passengers. At the 1933 Prague Auto Show the more powerful 1000cc Aero 30 was introduced with 28hp two stroke twin cylinder engine.

As the double-thousand was later presented the Aero 50 with 1996cc 48hp engine and front wheel drive (as the Aero 30). During WW2 the four seater Aero Ponny 750cc was secretly designed, as well as the Aero Record 1500, but these never came into production. In 1946 these were replaced by the Aero Minor II designed by R Vykoukal.

CCM



The Type 924 Skoda Superb of 1938 with overhead valve engine.

successful small and sports cars.

were later produced as Aero. In